# TQM Volume-14

# Total Quality Management in Factory Management

## *TQC - TQM*

2026a Edition

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Factory Management Institute

COOPERATING TO REACH EXCELLENCE

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Kimura ***Sensei*** worked in the ***Office and Production-Gemba*** for more than 45 years, during which time he developed the JIT production system as a supplier to Toyota, Honda, and others at Sumitomo Corp., advancing from a young engineer to General Manager and passing through internal and external consulting roles.

At the time of publication, and at age 80, he continues to disseminate original Japanese methods and impart more knowledge, even that learned from the pioneers. He has been an international consultant for the past 30 years, working in over 11 countries, where he has trained clients as both a lecturer and a writer. Even now, he is experimenting, researching innovative methods, and growing in the field of Production Management and Corporate structuration.

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# Icons:

**Notes**: Going back to the central theme.

The third level of the Issue provides greater clarity on the text's structure and is more relevant.

Lower levels of the Issue, commonly 6th or 7th, and pointing out necessary explanations about pictures or graphs.

# UPDATING TABLE:

| Date, Version-Previous & V-Next | Chapter (I..XX...) | Chapter Point.- sub-point : (Updating) |
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*TQM-14 Video Summary in English. LinkedIn publication by the Factory Management Institute →*

*← TQM-14 - The Soul of the Factory: video in Google Drive:https://drive.google.com/file/d/1XLTmLbD1qIA9rRg3beHjLhNv2FP1q9--/view?usp=sharing*

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# *SUMMARY [eng]*

*Sensei Kouichi Kimura's lecture explores quality management and organizational learning through two key areas.*

*First, he distinguishes TQC (reactive control) from TQM (proactive management), emphasizing that Japanese TQM integrates top-down and bottom-up approaches, unlike the American model. He highlights the importance of human intuition and creativity in the age of AI, recommending manual charts in the Genba for reflection.*

*The second part describes a guided self-learning exercise in which a team studies the implementation of the Toyota Production System (TPS) to shift to high-variety, low-volume production without inventory. Kimura stresses that a strong "corporate backbone'—a five-year strategy and annual policies—is essential for TPS success, warning that organizations lacking this are like "Jellyfish Companies' without stability. This is Volume 14 of a larger series on Factory Management, with current access links in the original document.*

*TQM-14 TQC vs TQM Audio summary:*
*https://drive.google.com/file/d/1ZdvbKETJ_YIQMkwLLI7lmPtiaiCV2pOr/view?usp=drive_link*

# RESUMEN [esp]

Esta lectura del Sensei Kouichi Kimura, experto en TPS y TQM, aborda la gestión de calidad y aprendizaje organizacional a través de dos ejes principales.

Kimura diferencia entre TQC (Control Total de Calidad) y TQM (Gestión Total de Calidad), explicando que el enfoque japonés combina la gestión de la alta dirección y el método 'Bottom-Up', en contraste con el estadounidense 'Top-Down'. Mientras que TQC es reactivo, TQM es proactivo e involucra estrategia y recursos humanos. Además, destaca que la IA requiere que el humano aporte intuición y creatividad, y recomienda gráficos manuales en el Gemba para reflexionar.

La segunda parte presenta un ejercicio de Jishu-ken, en el que un equipo que enfrenta la quiebra estudia la implementación del TPS para producir variedad y bajo volumen sin inventarios. Kimura subraya que el éxito del TPS requiere una "columna vertebral" con una estrategia a 5 años y políticas anuales, o la organización será una "Empresa Medusa" sin soporte para las mejoras. La lectura corresponde al Volumen 14 de una serie sobre Factory Management, con enlaces y QR en las notas del documento original. Sin estrategia, una empresa es como una medusa: puede moverse, pero sin columna vertebral, no mantiene rumbo frente a las corrientes mercadotácticas.

*TQM-14 TQC vs TQM Resumen en Español:*
*https://drive.google.com/file/d/1IpyPltipXXO4yAJqxKni4CYxV2dH3nOJ/view*

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# I. Prologue

In a conversation with a friend, I have told him the following phrase, “Don't think, feel.”

“Don't think, feel.”? …We are now in the age of AI. I understand that. Yet I deliberately chose to write about ‘intuition’ this time, sharing my perspective.

**The Philosophy of Zhuangzi**

Are you familiar with the Chinese philosopher Zhuangzi? …Zhuangzi taught that to grasp the Tao, one must follow the intuitive, natural workings of the mind rather than analysis based on logic or knowledge.

Among his famous sayings is: “Relying too much on knowledge distances one from the Tao.” He advocated ‘wu-wei ziran’ (following things as they are).

**‘Don’t Think, Feel’ and Its Meaning**

“Do not think, feel” ←→ “intuition.” I often use this maxim to myself. Its meaning is:

- Value intuition over reason: Grasp things directly through your heart and body, rather than overthinking them:
- Surrender yourself to the natural flow: Harmonize with the natural way, rather than forcing control through artificial effort.
- Gain through experience, not knowledge: To truly grasp principles, one must grasp them through one's own experience and senses, not through words or logic.

In other words, interpreting it according to Zhuangzi's philosophy, ‘Don't think, feel’ means: avoid overthinking with your head; instead, accept natural sensations, intuition, and flow to embody truth and the Way.

In this age of AI supremacy, how unscientific it is!

**The Human Brain and ‘Bias’**

The text discussed the capacity of the human ‘brain’. Humans (for now; the future is unknown. We likely won't live to see such a distant future)

Compared to AI, humans possess a mighty computer in the form of our brain.

But, ‘Intuition’. Is this unscientific? …Absolutely not. It's derived from the brain's active firing of neurons. However, humans are creatures with ‘bias’.

**Countermeasures for Bias**

There are two countermeasures:

1) Always approach everything with curiosity.

   *Example of Curiosity:* Did you know an elephant's trunk moves freely, with no joints, just muscles?

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I asked a silly question on social media: 'How many joints does an elephant trunk have? What about a snake?' Turns out an elephant's trunk **has no joints at all** – it's all muscle. Snakes, apparently, have between 120 and 500 joints.

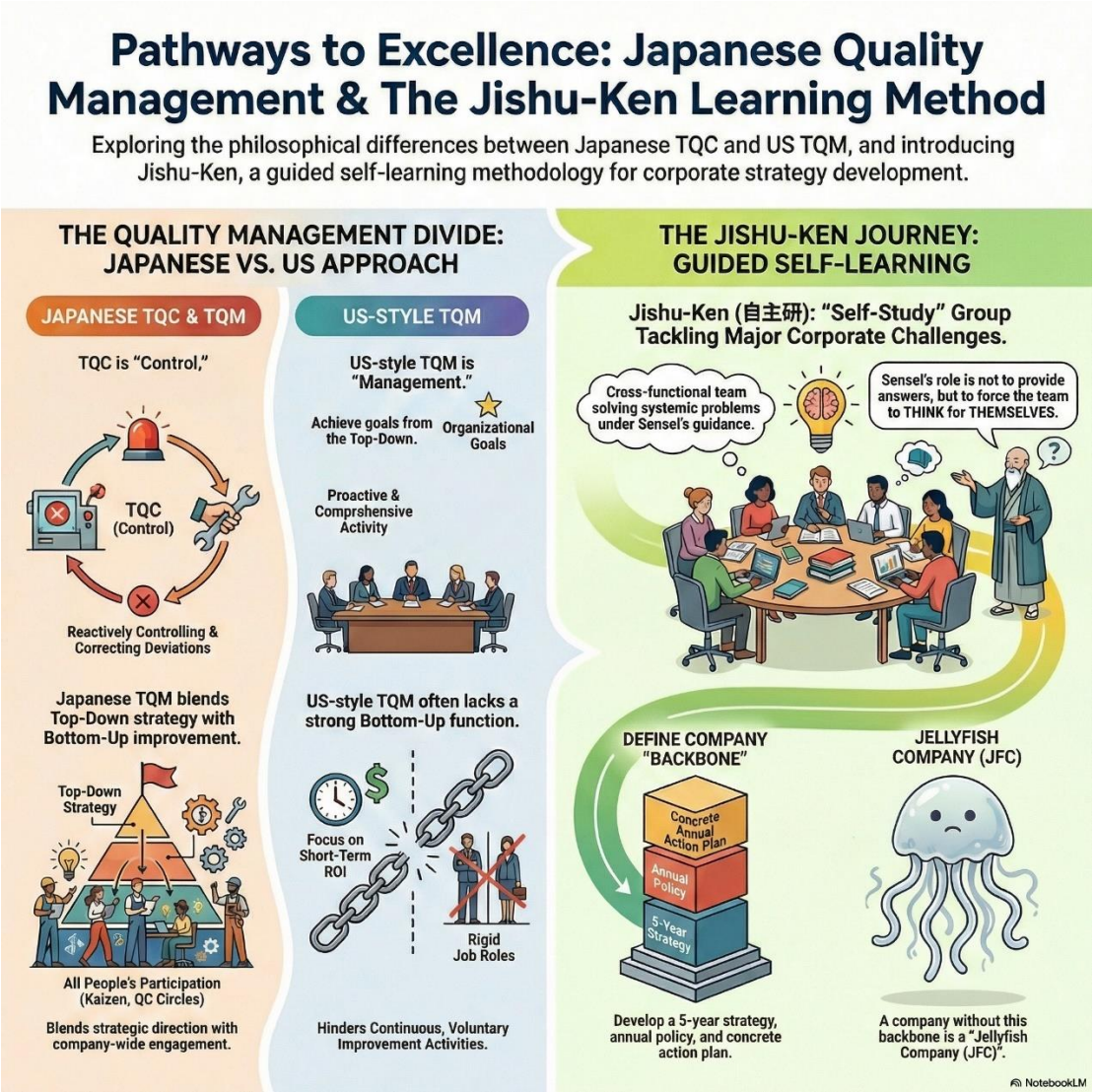
…Hum!

2) Another is to use KJ.
   - **Fully use your brain.**
   - **Escape from bias.**
   - **And fully use AI.**
   - Then use diversity… **by using KJ.**

I wrote about some QC Circle examples. QC Circle?! …In this day and AI age!?

That's precisely why I'm telling you to do QC Circle!

**Infographic of the lecture TQM-14 [english]:**

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# II. TQM - Total Quality Management

*As an aside, I was called "sensei" for many years before (from the age of Tokai Densen, predecessor company of SWS). The reason was that I was the education officer for all newcomers. Of course, it was a nickname. This nickname was continued during the Mexican operations. Therefore, I was called "profe[1]" (like "Hola profe").*

Let's talk about TQM and write about the New QC 7 Tools. Those stories were painfully dull. However, it is also a part of TQM. Therefore, it was no way.

Now, let us start the story of TQM (Total Quality Management).

Management? It is indeed the US people who love the word "Management".

Originally, TQM was spread with the name of TQC – Total Quality Control or Companywide Quality Control by K. Ishikawa in Japan. And when reaching this method in the US, the US people named it TQM. TQM. Quality Control by Total Management. This naming is actually cool, isn't it?

Then, the Japanese people also began to use this naming. However, please understand everyone. TQC and TQM are different. Moreover, the US cannot implement TQC.

Thus, I describe TQM, but it is not US TQM; it is Japanese TQM.

I have visited many US companies, including NUMMI (New United Motor Manufacturing Inc., a joint venture between Toyota and GM; 1984~2010) and Delphi (a GM plant that supplied parts, including wiring harnesses). And, how different are Japanese-style TQM and US-style TQM?

Japanese TQM, originally Total (Companywide) Quality Control, has both the functions of Bottom-Up (by Genba Kaizen) and Top management (involving policy control, organization, and management by KPIs).

US-style TQM doesn't have the Bottom-Up function. No, no, no. It is exaggerated. He has it. But very weak.

I have visited a supplier of Chrysler (Now 2025, Stellantis) and saw their Kaizen activity. And there was the Kaizen board, which had a Kaizen Suggestion Box with suggestion Sheets. The bunch of suggestion sheets was already bent, and the colour had changed. I tapped the box lightly. Then a cockroach flew out. After this occasion, I call a suggestion box "Caja de Cucaracha[2]".

[1] "Profe" is the familiar abbreviation of Professor in Spanish.
[2] [esp] Caja de cucaracha: [eng] Cockroach box

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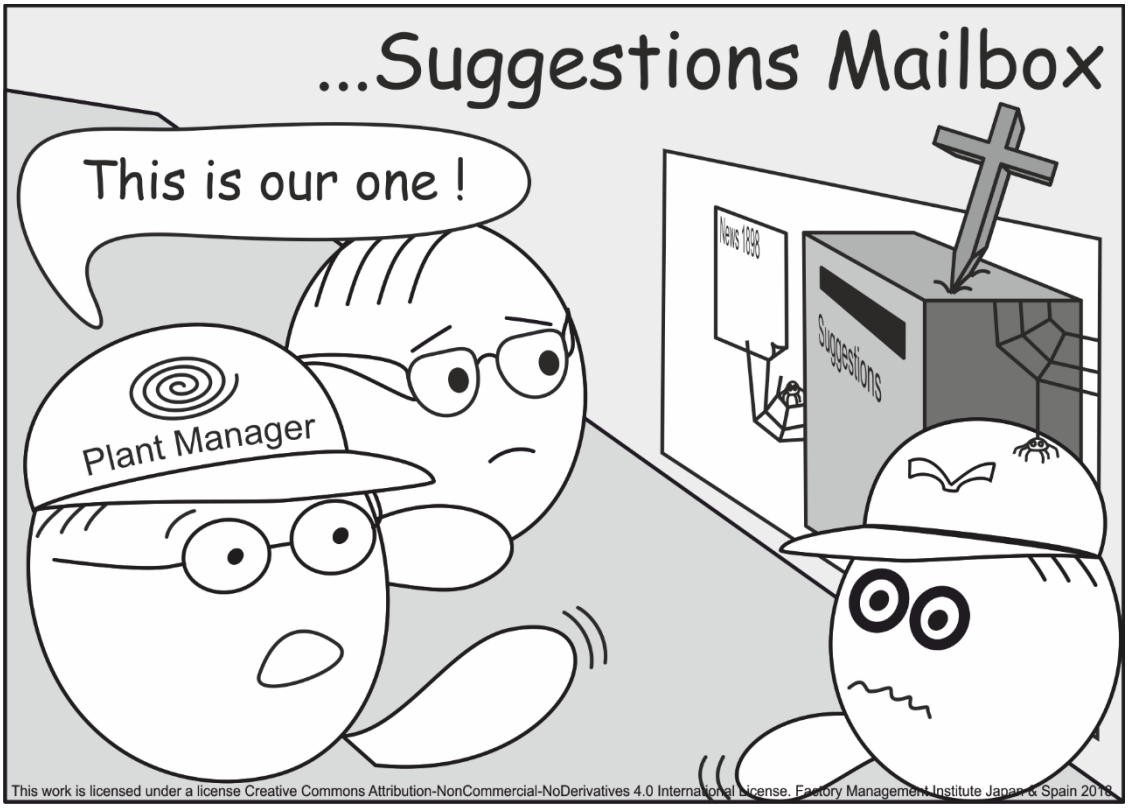


When I was at the Mexican plant, I had a conversation with the QA supervisor (Hereafter, Qs).

—*Profe*! —Called me the Qs—. Our factory quality is still at a low level, as shown by the number of customer claims and the defect ratio. How can we improve the management of quality?

—Management? —I asked myself, surprisingly—. So, do you want to talk about Total Quality Management"?

I began to teach and introduce Total Quality “Control”. Nowadays, in Japan, the term has also changed from TQC to TQM, which spread from the US.

—Once again, do you wish to talk about the quality improvement issue by "management"?

—Yes —they assured—, it is definitely. Why not?

I dare say we cannot improve quality with the US-style TQM. You love the word "management". It is pretty accurate that US manufacturing industries couldn't implement Japanese-style TQM, which combines the flow of bottom-up and top-down as follows, as shown in the picture, from Making stream of production-7.

*Figure 1: Making the stream of production 0-14 (7) in Internet Archive*

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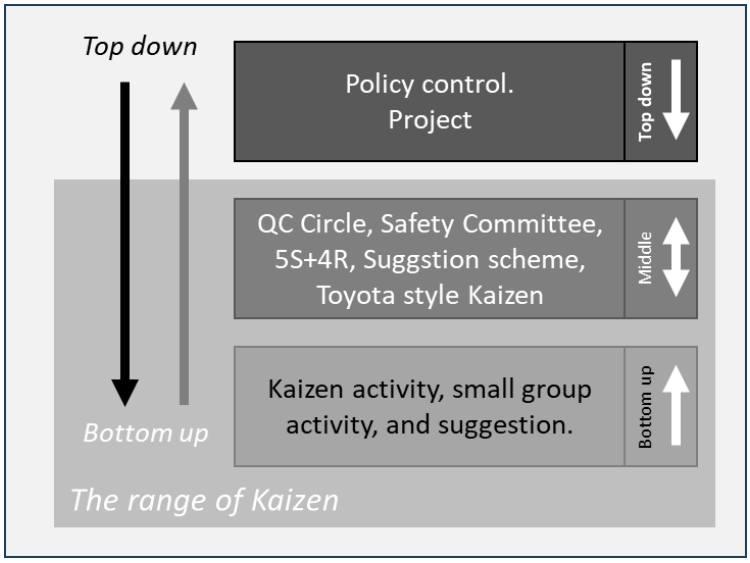


And US manufacturing industries are adopting a Top-Down approach (like 6 Sigma). At this time, there wasn't 6 Sigma yet.

The word Kaizen is now popular. However, the implementation and effectiveness in the US and Europe are lower than in Southeast Asian manufacturing industries.

The following story is from the 1970s (I was in a Mexican plant). Can such an old story be useful? Yes, it is. How about a production process? Most of the cases which I saw (including SNS information) have not changed the situation compared to this age and now so far.

And, not only the basic production process, but also the control process is not changed, even if edge computing and AI become widespread in production Gemba for the time being.

In the last issue, I showed the status of the wiring harness, comparing the Mexican plant with the current situation. At least, the fundamentals are not changed. Recently, the age of AI and Robots began. Yes, it is. AI will replace most white-collar workers.

Section manager? …Departmental manager, division manager and top management. AI will also replace their routine work. Accounting? Production planning, procurement ----? Most of the brainwork will be replaced by AI? …No, no, no. It may be wrong. And it may be true that the work of white-collar workers, such as the manager's work, will be changed.

Changed? …Well, the total headcount of white-collar labour will be reduced.

In this way, there was an interesting article in a newspaper published on October 8th of 2025: The title was: "AI replaces the jobs of new employees". And the sub-title was: "The employment ice age" for college graduates in the United States. The summary of the content is as follows:

> *'New York Current Affairs': Young college graduates in the United States are facing a situation similar to an 'employment ice age.' This is mainly due to a slowdown in hiring, particularly among major IT companies that have been driving economic growth. Generative AI is replacing the work of new employees, leaving college graduates without a place to go.*

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…

*According to data from the New York Federal Reserve Bank, the unemployment rate for those aged 22–27% with a university degree or higher was 5.8% in April, 1.8% higher than the overall rate of 4.0%, marking the largest gap on record.*

*By major, the unemployment rate for young people in 'computer science and computer engineering' was 6.1% and 7.5%, respectively, higher than the 3.2% for 'philosophy.'*

*The rise of AI is cited as the backdrop to these changes.*

*'Entry-level positions can be replaced by AI or at least have some tasks taken over by AI,' the analysis states.*

How should we do?

# 1) AI and Intuition

This story was a conversation with of my friend (Mf; Section Manager).

—Now it is the age of AI —Mf expressed—. No doubt, isn't it? And many of the white-collar workers' work is being replaced by AI. Probably, my position will also replaced in the very near future by AI.

—What do you think (What can I do)?

—Ha, ha, ha. it will be pretty accurate. What can you do? …My suggestion is to reconsider what a human being is. And you should act like a human being.

—Old man. I'm a little worried —he expressed concern.

—Stop, stop… Ehm…Old man? Am I? It is a deniable truce. And your age is like my son in low (52 years 2025). Am I old? Of course, my body is becoming older and older. However, however… my brain is sharper and sharper.

—Sorry, sorry —he repeated—. Please stop Mr. old ma… No, no, young brain man.

—Once again, what is your advice? Should I be like a human being, should I?

—Human being like… Humm —he some kind reflexed.

—Never mind Mr. Mf —I asserted—. I don't think managers could be replaced so quickly. It is just my opinion. It is simply because AI has several weaknesses compared to the human brain. For instance, energy efficiency. And, for instance, intuition as well.

—You may have concerns about AI capacity compared to the human brain. — I asked him.

—Several stronger points of the human brain? —he doubted—. What are these?

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—Well. Humm… —I hesitated—. There are several ways in which the human brain is superior to AI, aside from intuition. Let's review them again.

—Firstly, Energy efficiency (I mentioned this earlier) —I numbered—: The human brain has the ability to learn and understand with very little data. The brain consumes about 20% of the body's energy, but weighs only 1.2 to 1.4 kg. This efficiency is a superior characteristic compared to AI, which requires enormous amounts of data.

—Secondly, Emotional intelligence: You may tend to worry or become emotional quickly, but this is a strength of being human. Of course, excessive (like you) reactions can be problematic.

—Humans have the ability to understand emotions and empathize with others' feelings. This allows us to adapt flexibly to social situations and interpersonal relationships. While AI excels at making decisions based on data, it cannot understand emotions.

—Thirdly, Creativity: Creative thinking! You should keep or improve its capacity. Also, a good environment. Humans excel at creating new ideas and works of art. As I mentioned earlier when introducing Picasso's 'Guernica,' AI can imitate it, but he cannot create it.

—Creativity is based on experience, emotions, and intuition, and AI can only imitate existing data, so it cannot possess true creativity.

—Fourthly, Complex Decision-Making: It involves Logic and ethics. Humans have the ability to make ethical judgements and decisions in complex situations. While AI excels at logical analysis, it cannot make ethical judgments or decisions based on emotions.

—Fifthly, Flexibility in Learning: Humans have the ability to adapt to new environments and situations quickly. While AI often specializes in learning specific tasks, humans can learn from diverse experiences and flexibly change their thinking.

—Mf. kun —I finally concluded—. Do you understand? The important thing is to master the use of AI.

From these points, the human brain has many superior characteristics compared to AI. While AI excels in data processing and specific tasks, human emotions, creativity, and ethical judgements are unique strengths that AI cannot replicate. Therefore, collaboration between AI and humans is essential, and leveraging each other's strengths is expected to lead to better results.

—Decreasing of the head count of white-collar worker? —he asked me again.

—Yes, it may be true when looking longer term. But it never happened so quickly. Because the energy performance of AI is so bad comparing human brain.

—Much less a manager's task which is judgement based on the circumstances cannot be replaced so quickly.

—Because —I insisted—, once again, AI is bad energy performance than human brain.

—How much? …I don't know, but… To summarise several references, the comparison of the 'power consumption' of brain & AI is as follows.

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> ***Power consumption of the human brain:*** *The power consumption of the human brain is an astonishingly energy-efficient 20 watts. This is equivalent to the power consumption of a single small light bulb. With this small amount of energy, humans are able to simultaneously perform advanced functions such as complex thinking and judgement, emotional processing, creativity, learning and memory, and motor control.*
>
> *Next, the power consumption of AI systems: Remember the example of the Go AI 'AlphaGo'? …In 2016, AlphaGo, which defeated professional Go player Lee Sedol, consumed 250,000 watts (250 kW) of power. This is approximately 12,500 times the energy consumed by the human brain. It imply: 12,500 times!*
>
> ***from Felo Search***

—AI is a monster of eating energy so far. Therefore, it is never realistic that all tasks of white-collar workers and/or managers are replaced by AI.

—I don't know the future, but, rather than such concern, you and your staff must use AI conveniently in the range of areas where AI excels. And you must use your brain for **Creative Thinking like a human being**.

—Mr. Mf. My suggestion is to let your staff use AI more effectively and reduce the tasks that can be replaced by AI. Then you let them work on creative thinking. You never think of reducing your staff headcount. Please make a creative thinking environment. This is one of your tasks of AI age manager.

Looking back at history, for example, the Industrial Revolution refers to the dramatic changes in production methods and social structures that occurred mainly in Britain from the late 18th century to the 19th century. During this period, James Watt's steam engine replaced human muscle labour with machines. As a result, social structures changed, leading to population migration from rural areas to cities and the formation of a working class in urban areas. This also brought about significant changes in working conditions and lifestyles.

The same impact is happening now due to the emergence of AI. Robots can replace Gemba workers (Blue-collar). However, the production Gemba will exist (including blue-collar workers). And Genba Kaizen shall be needed for many years.

TQM? Is this necessary? How do you think? …Let's take a look at the historical impact of the AI revolution, using the example of its impact on white-collar workers and managers.

The rapid development of artificial intelligence (AI) is often referred to as 'the greatest technological transformation since the Industrial Revolution.' To reiterate, while the Industrial Revolution mechanised physical labour, AI automates intellectual labour, and its impact is comparable to that of the Industrial Revolution in terms of its social impact. Let's look at the changes it will bring, particularly to white-collar and managerial jobs, in comparison to the Industrial Revolution:

## 1. COMPARISON WITH THE INDUSTRIAL REVOLUTION

Let's look at the impact AI will have on us, using examples from the Industrial Revolution in Britain in the 18th century and the AI revolution that originated in the United States in the 21st century.

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### 1.1. Common Points

First, let's look at the common points:

- *Dramatic productivity improvement:* The Industrial Revolution dramatically improved the efficiency of physical labour through steam engines and mechanization. AI is bringing about similar innovations in intellectual areas such as data analysis, language processing, and decision support.
- *Changes in Employment Structure:* During the Industrial Revolution, there was a shift from agriculture to industry, leading to the disappearance and creation of many occupations. Similarly, in the AI era, while certain occupations such as clerical work and translation are declining, new occupations are emerging.
- *Need for Institutional Reform:* Just as the Industrial Revolution led to reforms in labour laws and education systems, the AI era will necessitate revisions to copyright laws, data regulations, AI ethics, and educational curricula.

### 1.2. Differences

- *Speed of evolution:* While the Industrial Revolution progressed over decades to centuries, AI is rapidly accelerating at a pace of several years.
- *Scope of application:* The Industrial Revolution focused on physical production, but AI extends to all areas of intellectual labor, including manufacturing, services, finance, medicine, and the arts.
- *Invasion of human thinking domains:* While the Industrial Revolution mechanized physical labor, AI is encroaching on uniquely human domains such as judgment and creativity.

## 2. IMPACT ON WHITE-COLLAR JOBS

### 2.1. Reasons for vulnerability

- *Automation of routine intellectual tasks:* AI can perform tasks such as document creation, data organization, and contract checking quickly and accurately.
- *Breakdown of information asymmetry:* The advantage of managers having more information than their subordinates is diminishing, and AI surpasses humans in information analysis capabilities.
- *Advanced decision-making support:* AI can instantly present multiple scenarios, reducing the need to rely on human experience and intuition.

### 2.2. Jobs with a high likelihood of elimination or reduction

- *Routine and repetitive clerical work: expense approval, routine report creation.*
- *Middle managers whose sole responsibility is information transmission.*
- *Simple data collection and report creation tasks*

***From a conversation with AI: Felo search, Genspark***

## 3. CHANGES IN THE IMAGE OF MANAGEMENT POSITIONS

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In the age of AI, the role of managers is changing from that of 'information owners' to 'conductors who combine the power of AI and humans.' Specifically, the following skills are required.

- *Strategic planning skills:* The ability to combine diverse resources, including AI, to create a long-term direction.
- *Interpersonal skills:* Motivation management and organizational culture formation, which AI cannot do.
- *AI utilization skills:* The ability to select and operate appropriate AI tools and incorporate their output into business.

**In summary**, the advent of AI will have a social impact equal to or greater than that of the Industrial Revolution. In particular, white-collar and managerial jobs are facing a major period of restructuring, requiring a shift from the traditional 'information gathering and communication' model to a 'value creation and relationship building' model. Rather than viewing AI solely as a threat, the key to future competitiveness will lie in strengthening areas that only humans can do and designing new forms of work that involve collaboration with AI.

Back to the dialogue…

—Profe! —the Qs requested me—. We don't understand why you are negative about US-style TQM. We don't think that there is a difference between Japanese style and US style TQM, like the one you are saying. Please let us know once again.

—Well —I make a reflection for a while—. I need to tell you, frankly, two things: one fact is that US manufacturing industries are worse than those in East Asia in terms of quality activities, relatively.

The quality level was too low as well. However, is my impression too old? …But according to my US friends, the situation of US manufacturing is continuing the same situation, and the recent quality level may not be changed, even though the US is a great country of AI.

—Management —I mentioned waiting for a minute before answering—. You love the word "management". The nuance of "management" is managing a thing from the top down or on a project basis. And it is missing the "Bottom up", which is possible to replace with the word "All people's participation".

—Why Profe? —The Qs insisted in the question—. Why are US companies really bad at the quality issue? Why do they take the US-style TQM?

—I tell you a general opinion firstly, but I think this theory is a fake —I detailed—. Well, bottom up first: All people's participation (for instance, to quality improvement, Kaizen Committee, Safety patrol, 5Ss). Let's take an example of ***Kaizen***. You know about the QC-Circle activity. I would introduce it in this plant…

—The QC Circle activity is very popular and well-known in the world. However, unfortunately, it is not spread in the US.

—Why? —I questioned to myself—. General theory says as next regarding the main reasons for this limited spread:

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a) *Differences in corporate culture:* In the United States, individualism and job clarification are strong, and there was resistance to "non-work activities." The culture of 'voluntary participation and self-management' of QC circles was difficult to instill.

b) *Impact of labour-management relations:* In the United States, negotiations between labour unions and management were often rigid, and business improvement activities were easily perceived as "convenient for management."

c) *Short-term focus on results:* US companies prioritize short-term ROI (return on investment) and find it difficult to allocate time to continuous improvement activities (Kaizen). Top management doesn't want such (bad) ROI in a short period.

**Current situation (2020s):**

Almost no companies in the United States directly use the term 'QC Circle.'

Instead, such activities have been integrated into frameworks such as Lean and Six Sigma, where small-group improvement activities still exist. Thus, in my opinion and based on my experience, these explanations are fake, except for the third one.

Differences in corporate culture? …It is true. But. It is necessary to consider the management side and the Gemba separately.

Once again. the word of "management". This word for management side is anyway "top down". For them, the word of management is the meaning of "to order or instruct".

How about Gemba. They don't use the word of management. And they are always waiting. How about Japanese companies? Same. It is same. But they also wish to think about something (whether it concerns the company or not. because they are human).

How about this point in US and other countries. It is same. At least in the companies who I have visited.

Once again, Differences in corporate culture? …Yes, it seems to be true. But it is just from the management side. And the thinking of Gemba is different (at least their position to be less than supervisor class).

Let's have a look following picture. These people were my lovely fellows. Their facial expressions were always lively. Just them? No, no, no. All Gemba workers showed the same facial expressions during the Kaizen activity and while "taking photos." These photos were of the Mexican plants. Unfortunately, I cannot show the cases of the US plant as you understand.

Honestly, there are 2 reasons: One is the opportunity of thinking, and this one is quite true. Another is being able to leave their habitual work. And, anyway, the mentality of Genba people was the same, whether Mexican, US, or East Asian.

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One Kaizen Group
Thanks for a memorable group!

One group leader is explaining quality improvement to his group using a Q Chart.

Good facial expression of the group. Indeed, an excellent leader he was.

While you are at it, I show an additional photo.

This photo is shown one Kaizen group recording their activity on a Kaizen-Chart

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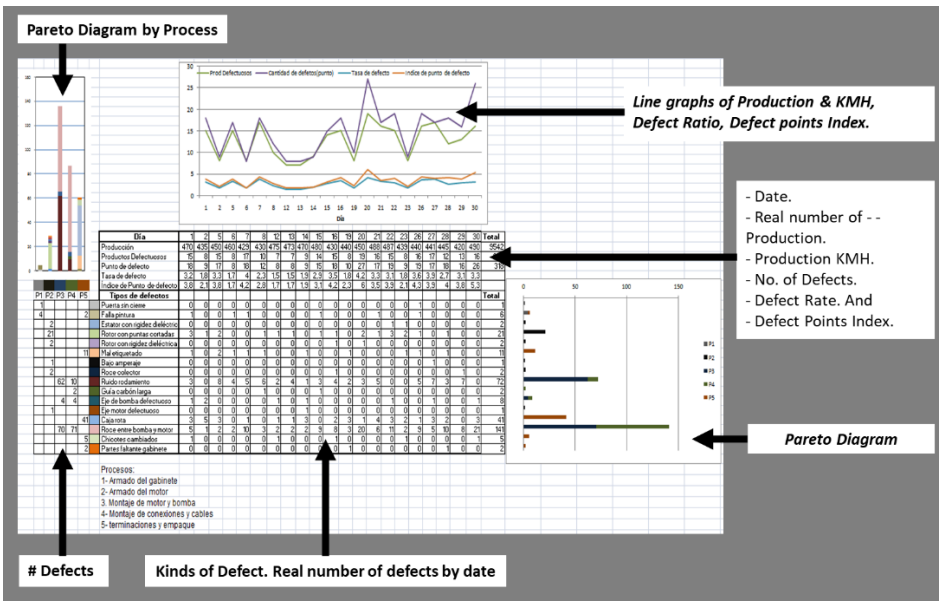
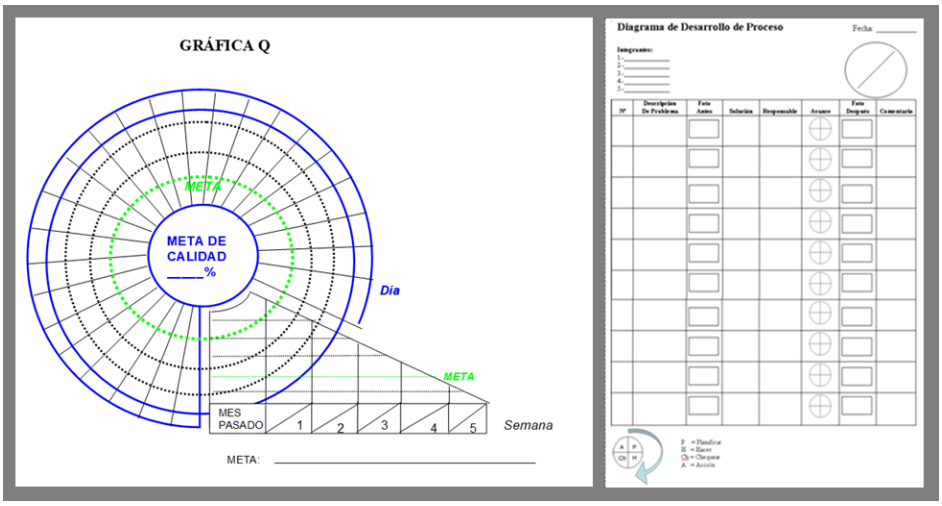
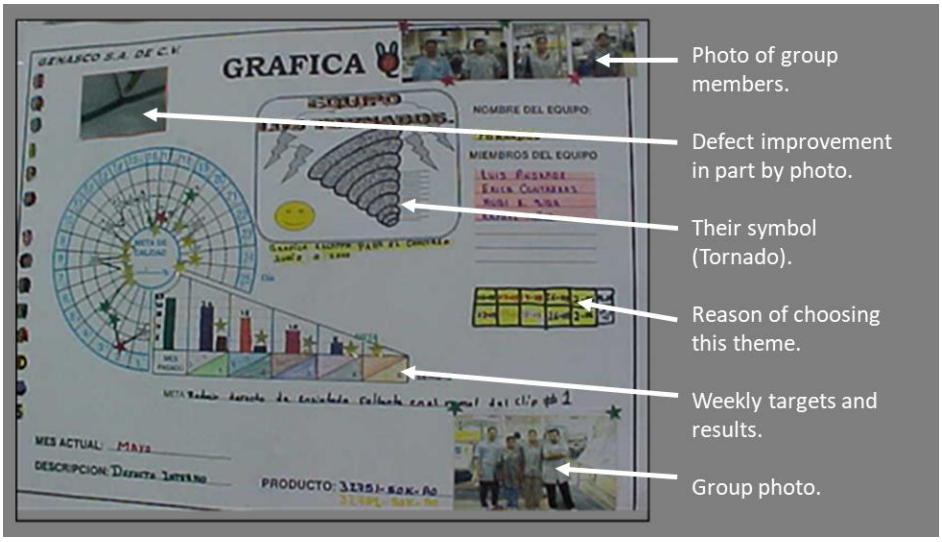
### *Q Chart? Kaizen Chart? What are these?*

*I have shown the following Cross Chart many times, and the next* Q-Chart.

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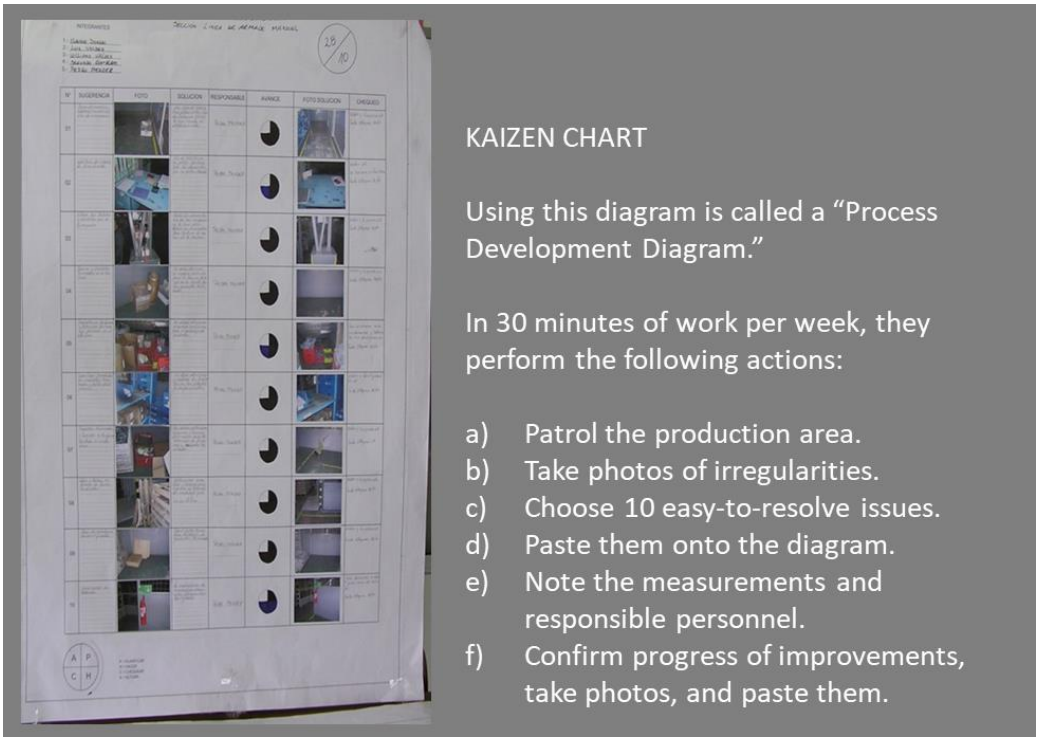


*The above Q-Chart got first place in the Q-Chart competition. Small target, but they made a good activity and a chart. Sometimes I made such a competition. The aim was to invite people to quality, whether the result wasn't good. Q Chart competition. It was indeed a good event. My opinion is that a manager should be good management executor and should be an entertainer.*

*Is it not necessary? Really, do you think so? …Your Gemba is stagnant and uninteresting, isn't it?*

*…Originally, I made this graph for QC Circle. However, there was one hurdle. It was very high turnover. Normally, a QC Circle lasts 3 months. But the Mexican plant had such high turnover (it was not just our plant; it was a common situation in Mexico Juares).*

*Then, I implemented just one month of QC-Circle with a small target.*

*In such an AI age, handwriting graphs & charts? …**I need to say you never use computer-generated graphs or charts in Genba**. These are required to maintain every day by manual.*

*You think to use computer. In fact, the age of the edge computer is now included in each process. The operator can see, for instance, the production schedule and progress, as well as the performance. It is good. However, when intending to do **Kaizen**, please use the graphs and charts manually.*

*Why? …There is a difference in the depth of thinking in the brain.*

*…Handwriting also plays a vital role in the creative process. Its slower pace provides time for deeper thinking and encourages the development of ideas. This makes it easier to overcome creative blocks and generate new ideas.*

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*For many years, I've been telling my students that **"the hand is a creative thinking part"**.*

*Please make or maintain graphs, charts, and KJ **manually**.*

Back to the conversation…

—Everyone —I called their attention—. The difference of TQC and US-style TQM are as follows:

- TQC is "Control".
- TQM is "Management".

—Ha, ha, Ha… Profe! … It is common sense —The Qs laughed.

—Yes, it is. It is common sense —and then I asserted detailing—. **Control**: Activities that monitor and measure actual results against pre-set goals and standards and take corrective action as necessary…

—It is focused on identifying and correcting deviations and is reactive in nature. It is a relatively narrow range of activities, with the main purpose being to maintain standards and correct deviations…

—For example, mountain climbing: There is a set route for mountain climbing, and deviating from it can be dangerous. Ensuring that you do not deviate from this predetermined route. This is control…

And then I detailed the other part: —**Management**: Comprehensive activities that involve strategy, annual plan, organizing, guiding, and controlling human resources, resources, and processes to achieve organizational goals…

—It covers a wide range of activities from goal setting to execution, evaluation, and improvement, and is proactive, proactive, and comprehensive in nature…

—Discovering and determining the route to reach the summit. It also involves controlling climbers so that they do not deviate from the route.

—We understand —the Qs admitted—. But can we implement Japanese-style TQM? …Because, as you know, the top management of our plants is US and Canadian. Of course, all wiring harness orders are from Sumitomo. And you are just one resident in these plants. And all of the plant managers are Mexicans.

—Once again —I insisted—, Japanese TQM and US style TQM are different.

—US or European companies pursue short-term better ROI. But the Japanese are clearly different, at least SUMITOMO. We are pursuing:

1. Valuing trust.
2. Responding swiftly to societal change.

—Sumitomo Electric aims to contribute to the development of a sustainable society and become a corporate group trusted by the international community.

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—Of course, ROI is important whether SUMITOMO. However, the continuation of the above company creed is more important than short-term ROI. This plant is one of SUMITOMO plant. Therefore, we need to obey the company creed as well.

—Management? —I asked myself—. Please understand that my “Management (Japanese style) and the US style are different.

—Anyway, what I want to tell you is 3 things —I detailed—. Even we all are in the age of AI consider the following ponts:

- Make judgement not in computer, but in Genba.
- Graphs and charts in Gemba should be maintained by manual. (Writing gives the opportunity of thinking)
- A data has multiple phases.

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# III. Jishu-Ken VII group exercise: TPS (Toyota Production System)[3]

So, here's how it all began: it was a ***Jishu-Ken*** (自主：Self, 研：Study) of a company.

The group members of this ***Jishu-Ken*** are **Em**: Engineering, **Hr**: Human resources, **Sm**: Sales, **Mp**: Production planning and **Pm**: Production. **Af**: Accounting staff (new member).

*Figure 2: TQM-13: Taguchi Methods (and JKishu-ken for TPS deplyment I)*

Why TPS? …Once again, the background of their choice was the situation of their company, which was indeed on the edge of a bankruptcy cliff. Next was the Balance Sheet (BS). Actually, this company was in insolvency.

The Managing Director, who was dispatched by Headquarters to resolve the financial aspects. He was declared the stop of the money supply no more by HQ. And it was declared that it would be done in 2 steps. One was the opportunity for self-development by leading for the Managing Director. Also, a little later, the DOPE (Development of Plant Efficiency—This naming is fiction) group was dispatched. And if these steps weren't succeeded the final decision would be declared.

The **Sm** opened the Jishu-ken session I was present: —Business change! —he mentioned seriously—. It is the change from mass production to high-mix, low-volume production. That suggestion is the meaning of TPS introduction, is that so? —he asked me.

| Assets | | Liabilities | |
|---|---|---|---|
| **Current Assets** | | **Current Liabilities** | |
| Item | Amount | Item | Amount |
| Cash and deposits | 10,000 | Notes and accounts payable trade | 110,000 |
| Notes and accounts receivable | 70,000 | Short term loans payable | 450,000 |
| Inventories | 180,000 | Current portion of long term debt | 80,000 |
| Other current assets | 10,000 | Other current liabilities | 40,000 |
| **Total current assets** | 270,000 | **Total current liabilities** | 680,000 |
| **Fixed assets** | | **Long term liabilities** | |
| Item | Amount | Item | Amount |
| Buildings and structures | 120,000 | Long term debt | 300,000 |
| Machinery, equipment and vehicle | 90,000 | Bonds payable | 20,000 |
| Land | 80,000 | Allowance for Pension.etc. | 30,000 |
| Other tangible fixed assets | 20,000 | Other Long term Liabilities | 20,000 |
| Goodwill | 0 | **Total Long term Liabilities** | 370,000 |
| Other intangible fixed assets | 10,000 | **Total liabilities** | 1,050,000 |
| Investment securities | 20,000 | **Total net assets** | |
| Other investment assets | 10,000 | Item | Amount |
| **Total fixed assets** | 350,000 | Capital stock | 100,000 |
| **Total assets** | 620,000 | Capital surplus | 50,000 |
| | | Retained earnings | △580,000 |
| | | **Total shareholders' equity** | △430,000 |
| | | **Total net assets** | △430,000 |
| | | **Total liabilities and net assets** | 620,000 |

[3] **Cost reduction/control & JISHU-KEN** is a series of lectures about the interpretation of different costs regarding calculating the Profit and Loss statement adequately, depending on the activity and policy of the company:
JISHU-KEN VI – TPS introduction – 2: [eng] https://archive.org/details/tqm-13-taguchi-method/mode/2up
JISHU-KEN V – TPS Introduction – 1: [eng] https://archive.org/details/tqm-12-matrix-data-analysis
JISHU-KEN IV – Cost Reduction – 11: [eng] https://archive.org/details/tqm-11-process-decision-program-chart/page/n49/mode/2up
JISHU-KEN III – Cost Reduction – 10: [eng] https://archive.org/details/tqm-10-the-matrix-diagram-and-qcc-working
JISHU-KEN II – Cost Reduction – 9: [eng] https://archive.org/details/tqm-9-pfmea/page/n35/mode/2up
JISHU-KEN I – Cost Reduction – 8: [eng] https://archive.org/details/tqm-8-the-arrow-diagram/page/n37/mode/2up Example of ***Jishu-Ken*** sessions of a middle managers working group: The group was studying the break-even point of the operations to reach profits in the short and medium term.
Cost Reduction – 7: [eng] https://archive.org/details/tqm-5-the-kj-method/page/n47/mode/2up
Cost Reduction – 6: [eng] https://archive.org/details/tqm-3-hardware-software-diagnose-cost-reduction-6
Cost Reduction – 5: [eng] https://archive.org/details/tqm-2-introduction-2-cost-reduction-5
Cost Reduction – 4: [eng] https://archive.org/details/tpm-16-oil-control-5/page/8/mode/2up
Cost Reduction – 3: [eng] https://archive.org/details/tpm-15-cost-reduction-3-and-consultancy-job-contnuation
Cost Reduction – 2: [eng] https://archive.org/details/tpm-14-clasification-of-cost-and-oiling
Cost Reduction – 1: [eng] https://archive.org/details/tpm-13-oil-control-3/mode/2up

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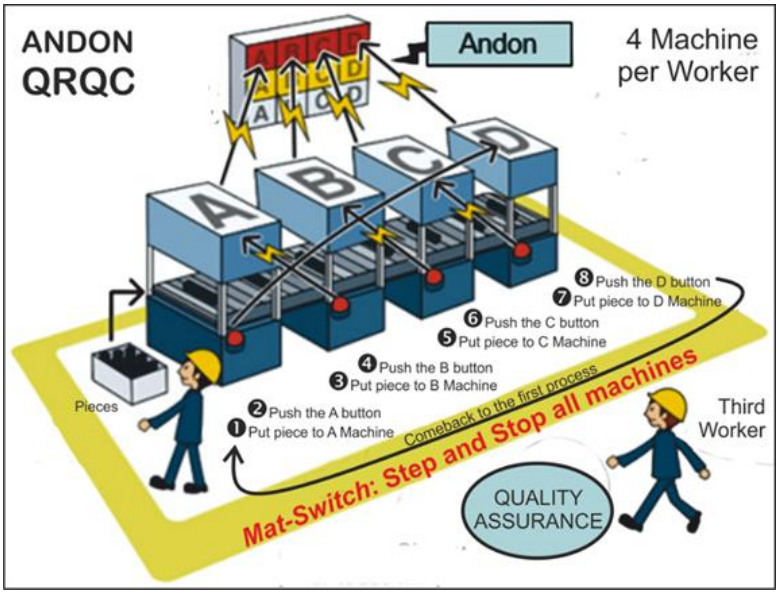


—No, it is not —I tried to explain my thinking—. That example is just one technique or concept of TPS. It is not necessary to introduce TPS itself, and it is also not possible for your company at this time. It is necessary to determine the direction of the production system by carefully examining your products and conducting a market survey. But it is essential not to have inventory that includes much work-in-progress, even though you will place any receiving orders and production style. For it, you need to choose a better system carefully.

—Our business model is now clear and was confirmed by top management —the **Mp** described—. ***Sensei***, as you already know, our plant's production and receiving order is High-Mixed Low Volume. But our plant hasn't been able to adapt to it. Also, "Inventory is evil. It is your word, isn't it? —**Mp** finally asked me.

—Yes, it is —I insisted—. Having no inventory. Saying is easy, but realizing it… Achieving many things is necessary, from receiving orders to delivery. Also, it is necessary to consider design engineering.

—Why do you need to have inventory? —I asked myself, and I questioned again: —Quick response to customer? Manufacturing performance? When seeing the real LT (Lead Time) from order receipt to delivery, how many days are necessary? No, it is not about "days" when referring to the LT of your products…

—Actual or substantial lead time is less than 1 hour from body punching press to assembling parts into the body, inspection, and delivery area (excluding waiting and stagnation time). It is quite clear when looking just LT, it is no necessary to have inventory. But it is also clear that it is necessary to have a minimum inventory, including WIP (work-in-progress). To realize it, what system and how do you introduce it…

—You emphasized often High-Mixed Low Volume production. What is your definition of High-Mixed Low Volume? For instance, the product series of H, W and L. These are now your main products. Are these High-Mixed Low Volume products? If fact, these are constituted of derivative models due to the customers' requirements…

—However, these are just derivative models. In my opinion, these are not Hight-Mixed Low Volume products, but Very Low-Mixed High-Volume products. These are another fact. You are receiving

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orders of spot products. Also, you are receiving an order for a brand new product development.

—These are indeed High-Mixed Low Volume. Everyone. What do you want? It is true that "Inventory is evil." I think it is a good direction to seek "No inventory production". If you seek it, you need to change the receiving order style to "made-to-order production system." Toyota is taking this system by TPS. On the assembly line, all products are allocated to an order. But he needs to have a minimum inventory controlled by ***Kanban***. And his line is basically adopted to Mixed (products) production.

—Hmm —**Sm** hesitated—. I understood that we need to survey our products not only for new ones but also for future prospects.

—Also—**Em** insisted—, we need to think about not only the product issues, but also our engineering matters, such as design engineering and production engineering.

—Everyone —I called their attention—. Thanks for visiting me. I give you a task. Of course, if you like, please come to see me. Any time you are welcome. If you come next, please confirm and let me know the "5-year corporate strategy" and next year's annual policy. OK?

…

# 5 years' corporate strategy, Annual policy and Annual action plan in the Jishu-Ken

The **Em** began the discussion: —Last time Sensei gave us 2 tasks. The first one is the Strategy and the Annual policy. The second one is to check the factory capacity using the Factory Management Check List.

## Long term strategy and Annual policy.

—Mr. **Pm**. How was your study? — **Em** asked.

—OK —**Pm** opened the exposition—, everyone. I studied these in a textbook and got the next teachings: Corporate Long term Strategy and the combination with Annual policy.

—In any case, the formulation of long-term strategies and annual policies is an essential element for companies to achieve sustainable growth. By maintaining a long-term perspective while ensuring short-term execution capabilities, companies can maintain their competitiveness in a rapidly changing business environment and continue to meet the expectations of their stakeholders (in our case, the head office)…

—It is important to position this strategy formulation process not merely as a planning exercise, but as a critical management activity aimed at unifying the organization's awareness and enhancing its capabilities. Developing long-term strategies and annual policies

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within a company is essential for clarifying the organization's vision, optimizing resource allocation, and managing risks. Additionally, annual policies serve as concrete measures to set short-term goals and promote performance improvement. These strategic initiatives contribute to the company's sustainable growth and stability.

—Yes —**Em** agreed—, it is correct. I believe so.

—I also knew it. But once again, we need to confirm it in detail —**Hr** pointed out.

—Mr. **Pm** —**Sm** requested—. Could you explain them more exactly. How can we treat?

—Let's cascade down these more detail —**Pm** then exposed:

**The necessity of formulating a long-term strategy and its relationship to annual policies.**

First***, long-term strategy*** (looking five years ahead)

1. *Clarification of direction*

   A long-term strategy clearly defines the future vision and goals of the company and serves as a 'North Star' that allows all employees to work toward the same goal. This creates a sense of unity throughout the organization and enables efficient management.

   Of course, it is important to constantly review the strategy.

2. *Building competitive advantage*

   By anticipating changes in the market environment and preparing ahead of competitors, we can establish a sustainable competitive advantage. Through long-term investment decisions, we can achieve significant results that cannot be obtained through short-term profit pursuit.

   Our company is currently in a very dangerous situation. DOPE has been dispatched, and policies focusing on cost-cutting (not cost kaizen) are being promoted, but we need to take a step back and determine what we should do. Unfortunately, we have reached this point without knowing whether the company has a long-term strategy or not.

3. *Risk Management and Opportunity Creation*

   By identifying future risks in advance and implementing countermeasures, we can enhance the stability of the company. At the same time, we can explore new market opportunities and technological innovations, nurturing the seeds of growth. I wish we had seized this opportunity sooner. But I don't think it's too late yet.

Next, ***the annual policy***.

**The Significance of Establishing an Annual Policy**

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1. *Concrete Implementation of Long-Term Strategy*

   We translate long-term strategies into realistic annual goals and convert them into actionable plans. This ensures that strategies are not merely theoretical but lead to concrete execution.

   I casually mentioned the introduction of TPS, and the professor admonished me to 'think carefully.' Should we include the introduction of TPS in the annual policy? I suppose we should first conduct a thorough analysis of the current situation before making any recommendations.

2. *Optimization of Resource Allocation*

   This serves as a guideline for allocating limited management resources (human resources, funds, time) in the most effective manner. It allows us to clarify priorities and avoid unnecessary investments. Still, DOPE is too violent.

3. *Progress Management and Course Correction*

   Through regular progress checks, we can measure the degree of goal achievement and adjust the strategy as necessary. This enables the organization to respond flexibly to environmental changes.

   In any case, I think the key is the annual action plan. This time, we must not let it end up as a mere wish list.

And, ***the interaction between the two***

**Long-term strategy *vs* Annual policy**

1. *Ensuring consistency*

   By linking long-term strategies and annual policies, it is possible to achieve a balance between short-term results and long-term value creation.

2. *Building trust with stakeholders*

   Companies with clear strategies and policies are more likely to gain the trust of investors, customers, and employees, thereby establishing a stable management foundation.

   In our case, the stakeholders are the headquarters. The long-term strategy, annual policy, and annual action plan must be ones that the headquarters can approve of.

3. *Promoting organizational learning*

   Additionally, the strategy formulation process itself serves as an opportunity for organizational learning, leading to improved market understanding and management capabilities. I personally found it very educational. What about everyone else?

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—Good job, Mr. **Pm** —**Hr** congratulates him for clarifying the exposition. And? …And what was the Sensei's comment? It is not just your comment, is it?

—Yes, please —**Pm** called their attention seriously and just a little disappointed— everyone! This is purely my study. Please believe. And Mr. **Hr's** question is offensive. But it is true to visit his office and have a conversation regarding corporate strategy and annual policy…

—And he said the word of "JFC".

JFC? —**Sm** requested clarification—. What is this? Sometimes Sensei says something mysterious. JFC? Is it a mistake of JFK, isn't it? …And, JFK is the meaning of Jone F. Kenedy former US president and was assassinated.

—Ha, ha, ha —**Pm** laughed more relaxed—. Not JFK, but JFC. He said our company is JFC. Its meaning is Jellyfish Company. As you know, a jellyfish has no backbone. And our company has no backbone like as jellyfish. He said that the series of stories about Strategy, Annual policy, and Annual action plan is the corporate backbone. For many years, our company has had, and still has, no backbone. And I told him that our position is that of one plant of HQ. Therefore, such a series of stories should be the task of HQ.

The **Mp** hesitated for a while: —Hmm... I also thought so. And our task is just to follow the HQ's policy. And? What should we do?

—I made the same question I made to the ***Sensei*** —**Pm** mentioned—. But he told me nothing while laughing. And he told me to think about it by myself… as usual. So, how should we do?

—OK, but… —Em doubted—. Wait a minute, everyone! …We are doing ***Jishu-Ken*** (Self learning). And it is not our aim to find solutions.

The **Sm** agreed: —Of course, we know that, but we were making the suggestion to top management as the members of the management team. Therefore, I personally wish to find a solution. Including the treatment for DOPE…

—My department (Sales department) made the marketing survey. And the results were next.

1. *Products H, W and L.*

   These are Medium-Mixed Medium Volume products.

   The market for these will continue. But New designs should be considered.

   Now, these are mainly derivative models for customer customization. And my suggestion is to integrate this function of customization. And to create new products.

   There is the market.

2. *High-Mixed Low Volume products.*

   We have some other kinds if this category. And some of this category may have the certain market. Then, my department is planning the special customer visit to dig the market needs. It is the meaning of digging the new series like as H,W,L. But I have a concern issue.

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—What? —**Em** seemed surprised— An engineering issue? — he questioned—. My department also needs to take countermeasures for DOPE, which requires me to reduce the number of staff. But Mr. **Sm**, your activity and information are very helpful to my department. Concern of engineering issue? Please don't worry about it.

—No, not the engineering capacity issues —**Sm** clarified—. I believe in your department's proficiency. My concern is deeper: the production Genba capacity issue. It is necessary to adopt high-mixed, low-volume production with no inventory. I cannot believe our plant could apply to it.

—Therefore —**Mp** repeated—, therefore… the solution is TPS, isn't it? I believe Sensei gives us the advice.

—No, I don't think so —**Hr** disagreed—. And I also believe it is essential to have his guidance. However, there is one hurdle. And it may be to have the corporate backbone: Corporate Strategy, Annual Policy, and Annual Action Plan.

**Mp** intervened: —***Sensei*** told me that JFC doesn't have the capacity to make up for it and only we can make the so-called "wish list".

—Wish list… —**Em** repeated—. This is the annual action plan for the Production department, led by our Production Manager. It includes the JIT introduction item in its action plan. But the implementation is nothing so far. Probably, not only Mr. PD, but also we were misunderstanding about the Annual Action plan. It must never be only a wish list, but the action items should be accomplished within the period.

—His message was: A company of no corporate backbone can never introduce such a deep system. One of his messages is that it should be a company-wide activity. And then, the story of "Corporate Strategy, Annual Policy, and Annual Action Plan" is essential. Another of his messages is that the project's president is the company's top, and in our case, it is our Managing Director.

—He told me about a story in SUMITOMO's case (SWS; Sumitomo Wiring Systems). His previous company also tried to introduce TPS (a customized TPS version). And it was succeeded (excluding the ***Kanban*** system of cutting cable taught by Mr. Suzumura. Backed to the original push system). In his case, this monthly review was also led by the president, who was a former president.

—***Sensei*** said that the TPS introduction is not the meaning of such Kanban System or other tools' introduction. Of course, if the tools are useful for Sumitomo or for his processes, these were introduced. And the aim is how many turns of "Inventory Turnover and LT".

—I got it —the **Mp** agreed—. Once again, my understanding is the following 5 points:

1. Our productions are Middle-Mixed Middle volume and High-Mixed Low volume.
2. Our aim is to apply these productions with no or low inventory.
3. To apply it, TPS is one of the essential tools.
4. To introduce it, TPS should be involved in the corporate backbone.

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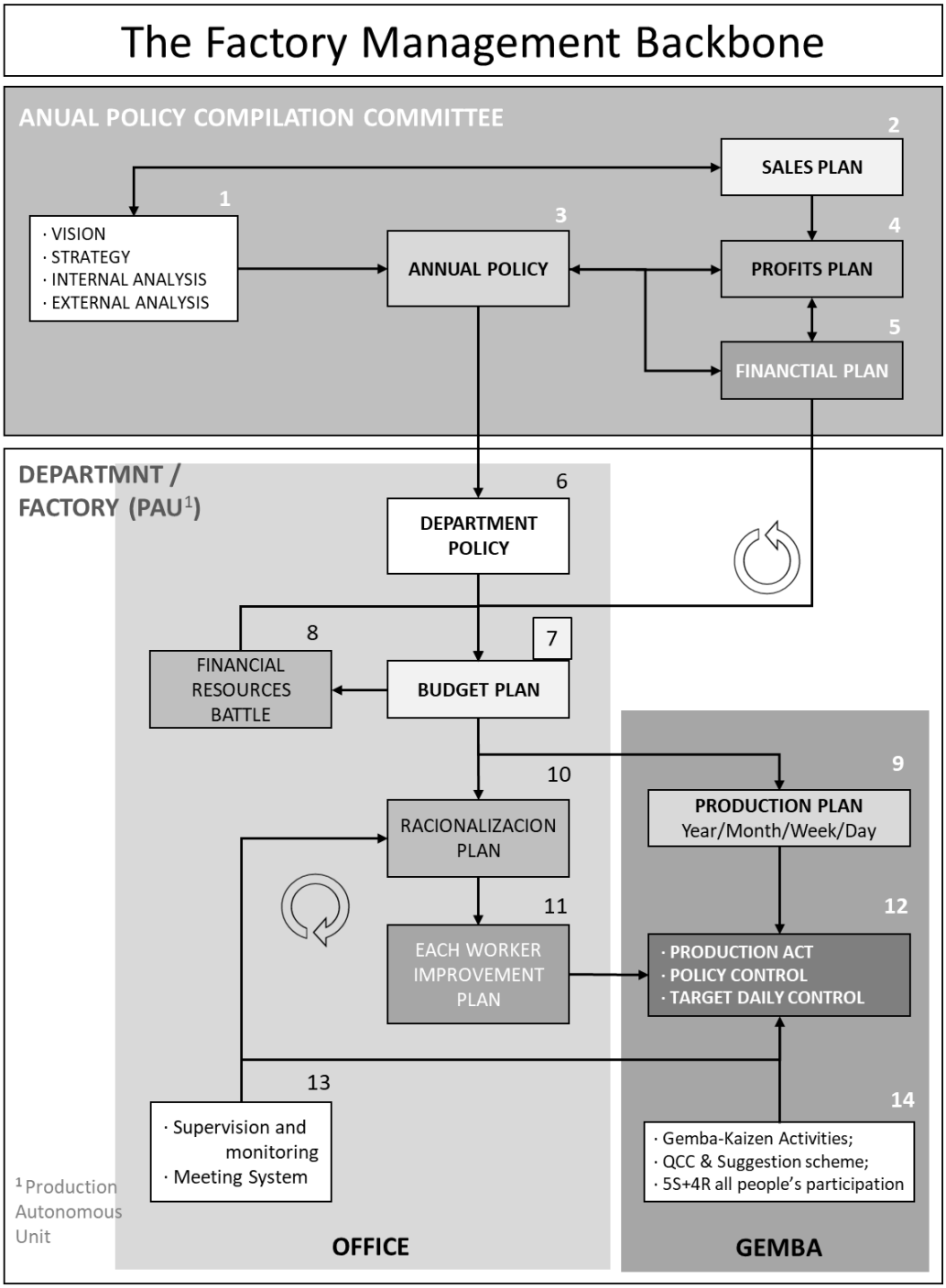
5. And… we need to make up the story (Corporate Strategy, Annual policy and Annual action plan[4]).

—Am I right? —**Mp** questioned to the ***Jishu-ken*** group.




[4] **The system of Excellence** (BOOK) encompasses all the Policy deployment & control (Hoshin Kanri) and the corporate constitution (Rightware) briefly described in this lecture, and YouTube video: https://www.amazon.com/dp/B09FC6C3NS https://youtu.be/GtxIrtjsQ9s?si=Mljh2TFfO579PnsU

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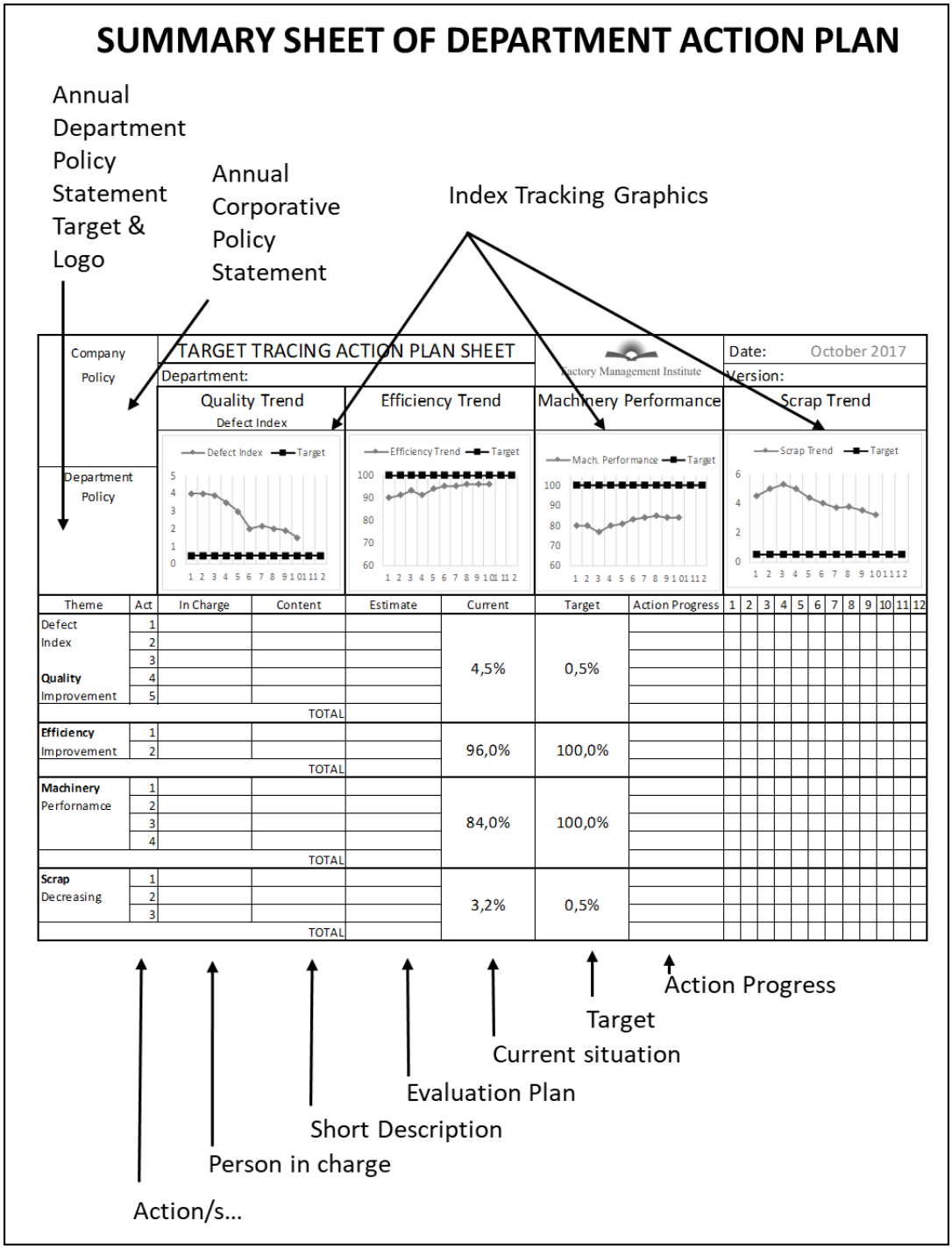


# IV. Following Lecture

We continue discussing the introduction to Total Quality Management (TQM). And, the TPS introduction in the ***Jishu-ken*** group.

**Koichi Kimura, CC4 – November – 2025**

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